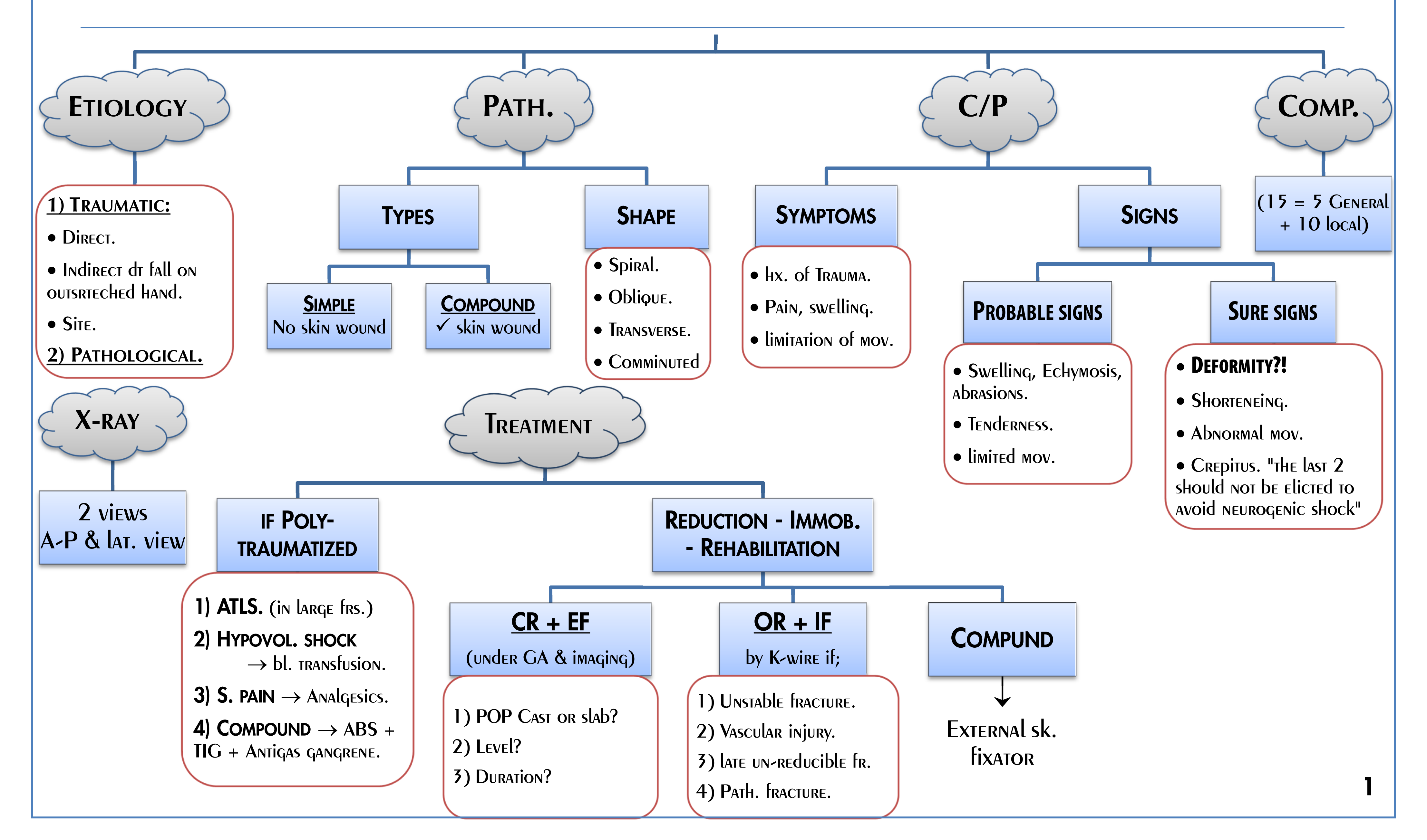
Summary of

ORTHO

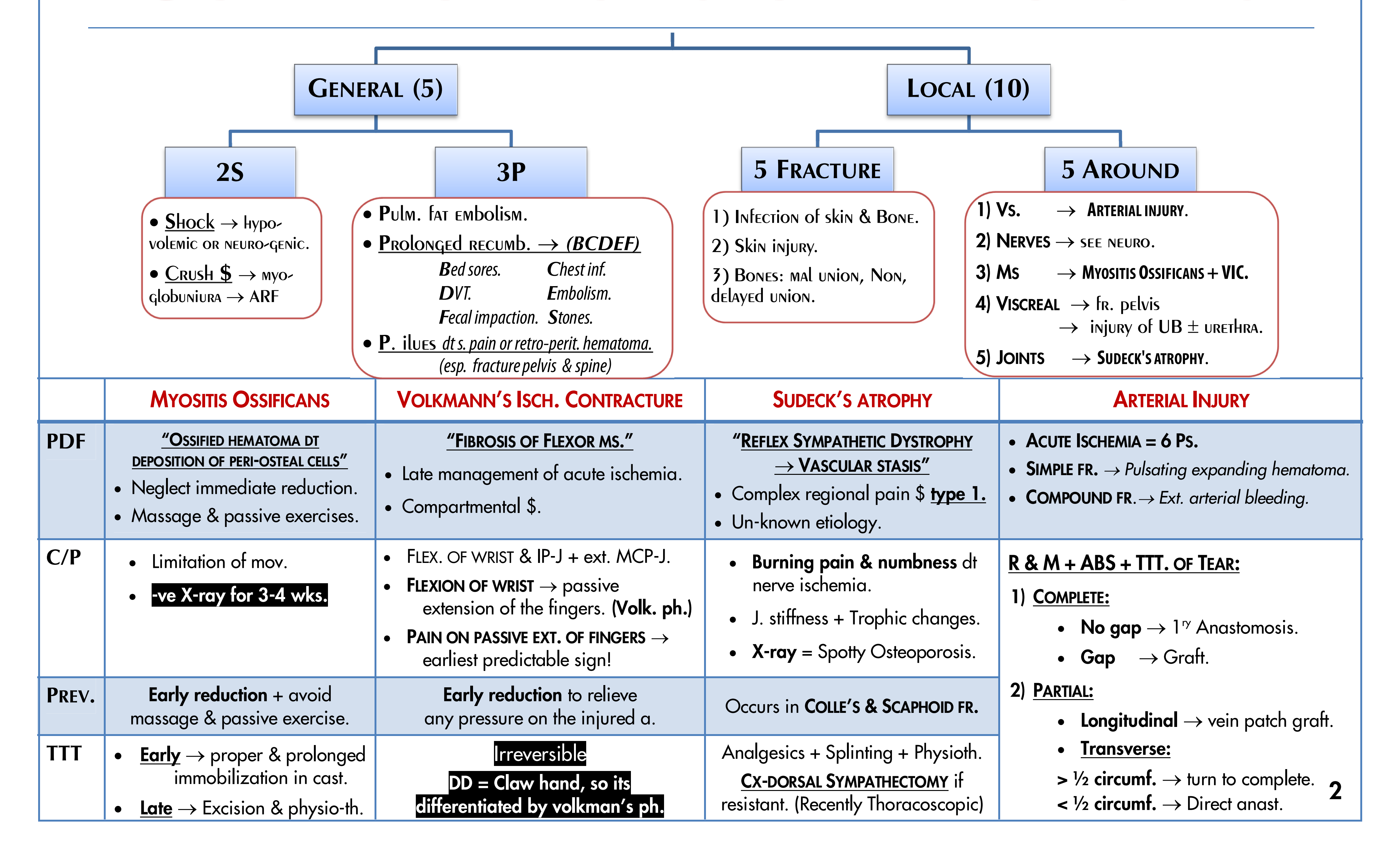
INDEX

if you found it useful
kindly share!

General Ortho Scheme



Complications of Fractures



General (5)

2S

- **Shock** → hypo-volemic or neuro-genic.
- **Crush $** → myo-globuniura → ARF

3P

- Pulm. fat embolism.
- Prolonged recumb. → *(BCDEF)*
  - *Bed sores.* *Chest inf.*
  - *DVT.* *Embolism.*
  - *Fecal impaction.* *Stones.*
- P. ilues *dt s. pain or retro-perit. hematoma.* *(esp. fracture pelvis & spine)*

Local (10)

5 Fracture

1) Infection of skin & Bone.
2) Skin injury.
3) Bones: mal union, Non, delayed union.

5 Around

1) Vs. → Arterial injury.
2) Nerves → see neuro.
3) Ms → Myositis Ossificans + VIC.
4) Viscreal → fr. pelvis → injury of UB ± urethra.
5) Joints → Sudeck's atrophy.

	Myositis Ossificans	Volkmann's Isch. Contracture	Sudeck's atrophy	Arterial Injury
PDF	"Ossified hematoma dt deposition of peri-osteal cells" • Neglect immediate reduction. • Massage & passive exercises.	"Fibrosis of flexor ms." • Late management of acute ischemia. • Compartmental $.	"Reflex Sympathetic Dystrophy → Vascular stasis" • Complex regional pain $ **type 1.** • Un-known etiology.	• **Acute Ischemia = 6 Ps.** • **Simple fr.** → *Pulsating expanding hematoma.* • **Compound fr.** → *Ext. arterial bleeding.*
C/P	• Limitation of mov. • **-ve X-ray for 3-4 wks.**	• Flex. of wrist & IP-J + ext. MCP-J. • **Flexion of wrist** → passive extension of the fingers. **(Volk. ph.)** • **Pain on passive ext. of fingers** → earliest predictable sign!	• **Burning pain & numbness** dt nerve ischemia. • J. stiffness + Trophic changes. • **X-ray** = Spotty Osteoporosis.	**R & M + ABS + TTT. of Tear:** 1) **Complete:** • **No gap** → 1ry Anastomosis. • **Gap** → Graft. 2) **Partial:** • **Longitudinal** → vein patch graft. • **Transverse:** > ½ **circumf.** → turn to complete. < ½ **circumf.** → Direct anast.
Prev.	**Early reduction** + avoid massage & passive exercise.	**Early reduction** to relieve any pressure on the injured a.	Occurs in **Colle's & Scaphoid fr.**	
TTT	• **Early** → proper & prolonged immobilization in cast. • **Late** → Excision & physio-th.	**Irreversible** **DD = Claw hand, so its differentiated by volkman's ph.**	Analgesics + Splinting + Physioth. **Cx-dorsal sympathectomy** if resistant. (Recently Thoracoscopic)	

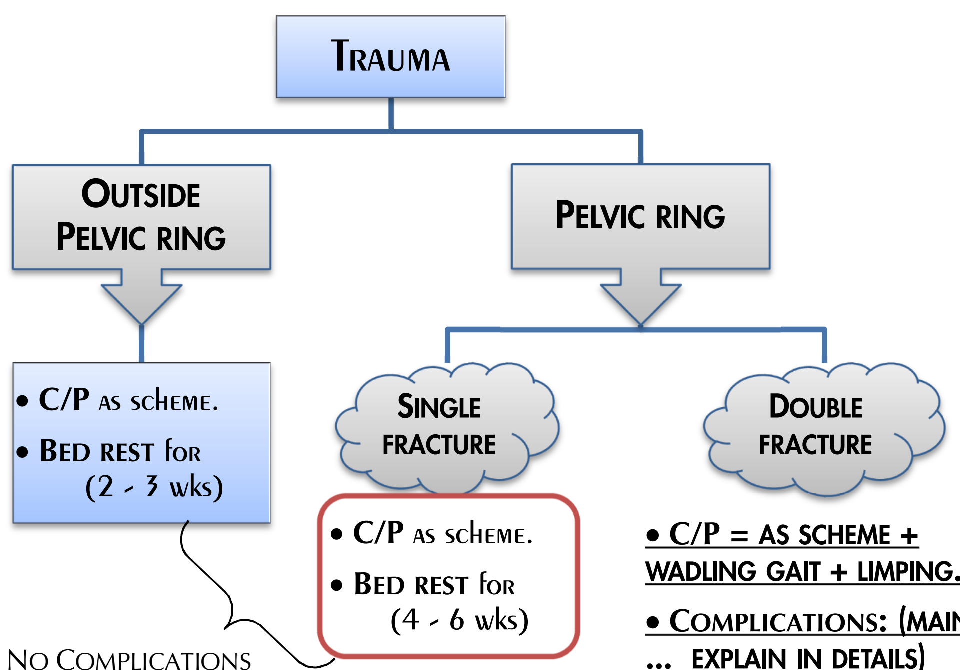
	FRACTURE CLAVICLE	SUPRA-CONDYLAR FR.	COLLE'S FRACTURE	FR. SCAPHOID
ETIOLOGY …SITE	**Junction bet. medial 2/3 & lat. 1/3** *(Junction of 2 curves / Change of contour / weak depression by sub-clav. Ms. + large nutrient a.)*	**Metaphysis** just above 2 epicondyles	Lower inch above **distal radius** **PATH.** = Old women's **Osteoporosis**	Waist of scaphoid
C/P	**SCHEME + STEP LADDER DEFORMITY:** • Mother carrying her baby. (the pt. supports his elbow)	**SCHEME + DEFORMITY:** • Ext. **90 %** → **dorsal** displ. • Flex. 10% → ant displ.	**SCHEME + DINNER FORK DEFORMITY DT:** • Dorsal & lat. displacement. • Impaction.	**SCHEME + NO DEFORMITY** but ***tenderness in anat. snuff box for DD.***
DD	**SHOULDER DISLOCATION**	**POST. ELBOW DISLOCATION** *3 points (olecranon + 2 epicondyles) → **DISTURBED TRIANGLE**)*	• **SMITH FRACTURE=** ventral displ. dt fall on *dorsum* of hand. • **CHAUFFEUR. FRACTURE =** fracture Styloid process Radius. (-ve X ray)	1) **WRIST SPRAIN.** 2) **FRACTURE STYLOID PR. RADIUS.** 3) **BENNET'S FRACTURE.**
COMP. (SCHEME) **INVEST.** (X-RAY)	1) **GENERAL = NEUROGENIC SHOCK!** 2) **MAL-UNION. (M/C):** • ***Cosmetic disfigurement only*** not interfering with function. • Thoracic Outlet $. (rarely) 3) **INJURY OF SUB-CLAV. VS & PLEURA** → DVT in UL.	1) MYOSITIS OSSIFICANS. 2) VOLKMANN'S ISCH. CONTRACTURE. 3) **BRACHIAL A. INJURY. (SEE COMP)** 4) **MEDIAN** > RADIAL > ULNAR nerve injury. (as elbow) 5) **CUBITUS VARUM > VULGUS (DELAYED ULNAR NEURITIS)**	1) **MAL-UNION. (M/C)** & never non-union. (firmly impacted) 2) **SUDECK'S ATROPHY.** 3) **MEDIAN N** + CARPEL TUNNEL $. 4) **TEAR** IN TENDON OF **EPL.** 5) **MADE LUNG'S DEFORMITY:** radial dev. of wrist dt ↓ growth of lower radius compared to ulna in children.	1) **NON-UNION although its impacted but dt *.** 2) **AVASCULAR NECROSIS*** in the Px. phalynx 3) **SUDECK'S ATROPHY.** **INVEST:** • **-VE X-RAY FOR 2WKS** till hematoma is formed. • **BONE SCAN = DIAG.**
TTT (SCHEME)	**1) CR + EF under GA:** • **Method** = Child → Figure 8 bandage. Adults → Arm to neck sling. • **Duration** = 3-4 weeks	**1) CR + EF under GA:** • **Method** = Post. Plaster **slab** + Follow up **radial pulse**. • **Level** = ***above elbow*** to knuckles held by sling. • **Duration** = 3-4 weeks	**1) CR + EF under GA:** • **Method** = 3 hand-grips. • **Level** = ***below elbow*** cast. • **Duration** = 6 weeks	**If Sure:** • **Level** = ***below elbow*** cast + ***px phalynx of the thumb.*** • **Duration** = 8-12 wks **IF –VE X RAY →** ***Scaphoid plaster*** for 2 wks then repeat X-ray or **Bone scan** if pain persists & still –ve.
	2) OR + IF if… 3) COMPOUND…	**2) OR + IF if…**	**2) OR + IF if… 3) COMPOUND…**	

	Fracture Neck Femur	Fracture Shaft Femur	Pott's Fracture
Etio	**Mild trauma dt senile Osteoporosis** stumble over carpet or stairs.	**Major**: **DASH-BOARD** injury car accident. (fr. patella – mid-shaft femur – PHD)	Fracture around the ankle!
Path.	**Intra-capsular** • Sub-capital. • Trans-cervical. • Basal. ➢ **Garden's classif.** **Extra-capsular** • Inter –troch. • Trochanteric. • Sub-troch.	**1. Sub-trochanteric**: *px. seg. → flexed by ileo-psoas.* *dx. seg. → add. by adductors* **2. Mid-shaft**: *Over-riding* **3. Supra-condylar**: *px. seg. → fwd. by Quadriceps* *dx. seg. → bwd. by gastrocnem.*	**Ext. Rotation (M/C)** = Everted = Abducted • **1⁰ → Oblique shearing fr. of LM** *dt lat. talus disp.* • **2⁰** → as 1st + **Transv. avulsion fr. of MM** *or rupture medial lig.* • **3⁰** → as 2nd + fracture **PM** *dt **post lat.** talus displc.* **Int. Rotation** = Inverted = Adducted … **MM** … **LM** ***or** rupture lat. lig.* … *dt **post-med.** talus displ.* **Ventral compression fracture** **Ant. marg. fr.** *if ankle dorsi-flexed.* **Post. marg. fr.** *if ankle plantar flexed.* • **Burst fr.**
C/P	**Scheme + Deformity:** • **Flexion - Abd – Ext. rotation.** • **True** supra-troch. shortening. (Nelton's – Shene's line – Bryant triangle)	**Scheme + Deformity:** **(see above)** **Hypovol. shock!**	
Comp. *(scheme)*	• **Myositis ossifcans < HD.** • **Avascular necrosis > HD.** dt injury of retinacular vs. • **Sciatic n. injury. (un-common)** • **Mal-union** → Coxa vara. • **Non-union dt** Avascular necrosis + Senile atrophy of bone.	• **Myositis ossificans** of quadriceps. • **Mid-shaft femur** → FA injury / Knee stiffness. • **Supra-condylar:** **a)** Popliteal ns & vs. injury. **b)** Ischemic leg contracture → *fibrosis & atrophy of calf ms. → equino-varus of foot.*	**1) Non- union: e**specially **MM fracture** dt in folding of the periosteum → soft t. inter-position. **2) Sudek's atrophy.** **3) Ankle stiffness.**
TTT.	**Intra-capsular** – Displaced "Av. necrosis" → Total or Hemi- Arthroplasty "Austin moore or Thompson" – Non-displaced "No Av. necrosis" → OR IF by Cannulated nails **Extra-capsular** → "Inter-trochenteric" OR + IF with DHS or DCS	**TTT. of Hypo-vol. Shock + ATLS:** 1) **Sub-troch.** → ORIF by DHS or DCS. 2) **Mid- shaft → according to age:** • *Adult* → ORIF by *intra-medullary* if transv. fr. – *inter-locking* nail if comminuted. • *5-15 ys.* → Skin traction + Thomas splint. • *1 - 5 ys.* → Skin traction + Gallow's splint. 3) **Supra-condylar** → **OR IF / CR** + Skeletal Traction by Bolen beam. 4) **Compound** → Anti- (A) + EF **"Lizarov"**	**TTT. of ..:** • 1st → CR + EF below knee cast for 6 wks. • **2nd & 3rd** → OR IF + malleolar screw if…. **TTT. of Vertical compression** • **Ant & post marginal fracture** → OR IF. • **Burst ankle** → Arthrodesis.

DISLOCATIONS

	ANT. SHOULDER	POST. HIP	CONGENITAL (CDH)	
INCIDENCE	M/C Shoulder dislocation	M/C Hip dislocation	• F > M / UNI-LATERAL. • PATHOLOGY = HYPO-PLASIA OF HIP J. → Shallow acetabulum + small flat femoral head. → Interrupted Shenton's line.	
TRAUMA	• Fall on outstretched hand. • Direct trauma pushing head fwd.	• DASH-BOARD car accident.		
CL./P	SCHEME + DEFORMITY: • **Flexion – Abd – Ext. rotation.** • Flattening of the Shoulder (Squared-off or box-like)	SCHEME + DEFORMITY: 1) **FAdI = Flexion – Add – Int. rotation.** 2) **Apparent** supra-troch. shortening.	**NEONATES:** • Limited abduction → diff. application of napkins.	**INFANTS:** • Delayed walking. • Waddling gait.
COMP.	1) **Recurrent dislocation. (M/C)** 2) Axillary N. & A. injury. & Radial N. injury 3) Rupture supra-spinatus tendon. 4) Septic arthritis, OA, frozen shoulder.	1) **Myositis ossifcans > FNF.** 2) **Avascular necrosis < FNF.** 3) Fracture post. lip of acetabulum + sector fracture of head of femur. 4) **Sciatic n. injury.** 5) Osteo-Arthrosis of hip j.	**TESTS:** 1) **Ortolani's** sign. **"Click test"**…دخلها بالعافية 2) **Barlow's** test.. modified بيدخلها و يطلعها	**TESTS:** 1) **Telescopic** sign. 2) **Trendlenberg's** +ve → **S**ound **S**ide **S**ags.
X-RAY		*empty acet. / displaced f. head / Interr. Shenton's line*	**-ve X-ray** in 1st 3ms → **U/S**	X ray = pathology
TTT	1) **Early < 4 wks → CR + EF under GA** by Kocher's / Milch's method. 2) **Neglected > 4 wks** → OR + EF. 3) **If recurrent** → Bankart op.	**CR + EF under GA.** by Allis' or Stimson method.	**AIM = DEEPEN THE SHALLOW ACETABULUM:** • **Early** → Reduction + abduction splint (Pavlick Harness or Von Rosen) for 6ms. • **Late** → Saltar's osteotomy. • **Neglected cases** → Total hip replacement.	

FRACTURE PELVIS



• C/P = AS SCHEME + WADLING GAIT + LIMPING.

• COMPLICATIONS: (MAINLY … EXPLAIN IN DETAILS)

1) UROLOGY: EXTRA-PERITONEAL RUPTURE OF UB
INTRA-PELVIC RUPTURE URETHRA.

2) HYPO-VOL. SHOCK. (CLASSES)

3) PROLONGED RECUMBANCEY.

4) RETRO-PERITONEAL HEMATOMA → CONSERVATIVE.

5) RECAL TEAR → REPAIR + PX DIVERTING COLOSTOMY.

INVEST:

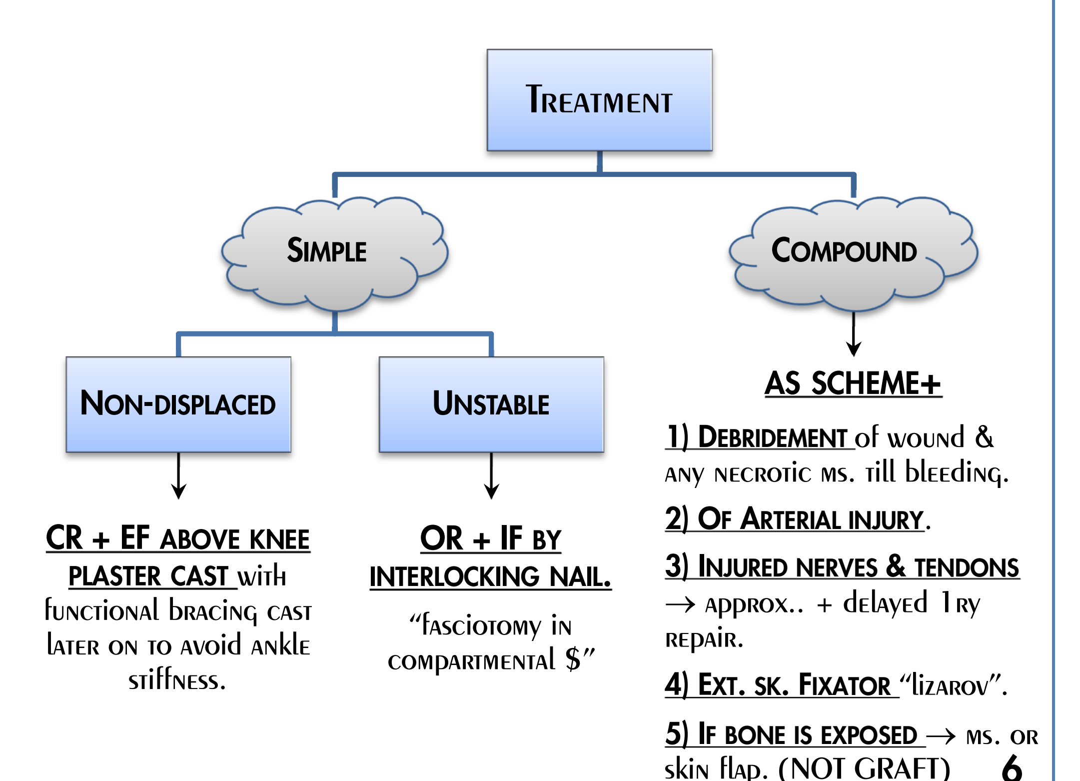
1) X-RAY PELVIS.
2) 3D CT SCAN.
3) OF VISCERAL INJURIES.

TREATMENT:

1) RESUSCITATION+ ATLS
2) TTT. OF ASS. INJURIES.
3) STABLE → CR + EF BY PELVIC SLING.
4) UNSTABLE → OR IF
5) ASS. VISCERAL INJ. → EXTERNAL SK. FIXATOR.

FRACTURE TIBIA

- **C/P = AS SCHEME.**
- **COMPLICATIONS = AS SCHEME +**
  1) COMPOUND FR. → SKIN LOSS THAT REQUIRES PLASTIC RECONST.
  2) COMPARTMENTAL $ & ACUTE LL ISCHEMIA.
  3) INJURY OF TIBIAL VS.
  4) DELAYED & MAL-UNIO. (20%)
  5) ANKLE J. STIFFNESS IN PTS. WITH ABOVE KNEE PLASTER CAST.
- **INVEST. = X-RAY.**



	Giant Cell Tumor	Osteo-Sarcoma	Ewing's Sarcoma
%	**Locally Malignant or Benign.**	**(M/C 1ry malig. tumor in child)**	**(2nd M/C 1ry malig. tumor in child)**
Site	• Epiphysis. • Lower radius / upper tibia.	• Metaphysis. "أي حاجة في العظم" • Lower femur.	• Diaphysis. • Tibia.
Cell of Origin	Un-known.	Osteoblast.	Vascular endothelial cells of BM.
Mac	**Mass = Fleshy + Maroon shape color.** • **Expansion** → thinning of cortex. • **Spread** → up to sub-chondral j. • **Irritation of Peri-osteum** → reactive new bone formation around the tumor → **Soap bubble app.** • Junction bet. tumor & diaphysis → **Medullary plug.**	**3 Types:** **1)** Purely Osteo-blastic. (50%) **2)** Purely Osteo-lytic. (30%) **3)** Mixed. (20%)	**Mass = Fleshy Tumor.** → *Expansion of diaphysis.* → ***new bone formation*** *at diff. intervals dt remission & exacerb.* → *layers of peri-osteum* → **Onion Peal app.**
Mic	**Multi-nucleated** giant cells + stromal **spindle** cells. *(is it aggressive?)*	**Spindle cell sarcoma**	**Round** cells arranged in **rosette** manner around central vs.
Spread	**Mainly local**	**Direct – Blood** to "lung" **– Local.**	**Direct – Blood – Lymph.**
C/P: Age	**20 – 40 ys.**	**10- 20 ys.**	**10 – 20 ys.**
• **Pain.** • **Swelling.** • **Path. Fr.**	• **Swelling then pain** "dragging". • **Path. Fracture = Early.**	• **Pain** "sawing" **then Swelling.** • **Path. Fracture = Least** as the pt. is bed ridden bec. of the pain → less trauma.	• **Painful swelling + Fever as AOM.** • **Remission & Exacerbations.** • **Staging = MSTS. (see misc.)**
O/E	Egg crackling sensation.	• **Osteo-blastic** → Bony Hard fixed swelling. • **Osteo-lytic** → Soft vasc. pulsating swelling.	**as AOM in** (Age + Painful Swelling + Remissions)
X-Ray CT – **MRI*** / **Biopsy**	**Soap-bubble app. / Medullary plug**	• **Sun-ray app** *new bone form. dt stretched peri-osteal vs.)* • **Codman's triangle** *new bone form. at center > periph*	**Onion peal app. / ↑ESR**
TTT.	• **Wide local excision + Prosthesis.** • **Curettage + Graft** → Recurrence. • **Inaccessible bone** → Radioth. • **Malig. or recurrent GCT** → Amputation.	• Amputation. • Wide local excision **+ Neo-adjuvant & post op. Chemoth.** to avoid recurrence. • Lung metastasis → **Chemoth. + Lobectomy.**	• Same + **Radiotherapy** to avoid recurrence.

Benign Bone Tumors

Cl./P of Any Benign Bone Tumor:

- Discovered accidently.
- Dull ache pain.
- Pathological fracture.

	Non-Neoplastic mass		Benign Bone tumors			
	Simple Bone Cyst	**Aneurysmal Bone Cyst**	**Chondroma**	**Osteoma**	**Osteoid- Osteoma**	**Osteo-Chondroma**
Where?	**Metaphysis of** **Upper humerus**	**Metaphysis**	**Metaphysis** of **Short long bones** of hand & feet. (Metacarpals)	**Skull.** **(painless)**	Any site **except Skull**. **(v. painful)**	**Metaphysis** **(M/C benign tumor)**
Path.	Cyst with **Clear straw** colored fluid.	Cysts with **blood** + trabeculae of osteoid & osteoclast giant cells.	• Central → **Enchondroma.** • Eccentric → **Ecchondroma**		Cortex of bone	• Bony projection with cartilaginous cap. • Hereditary **Multiple Exostosis.** • Ass. with **Gardner's $**
Malig.	✗	✗	**Enchondroma mailg. (1%)**	✗	✗	**Chondr-Sarcoma "5%"**
TTT	Curettage & Grafting	Curettage & Grafting	Curettage & Grafting	Excision.	Excision.	Excision.

Acute Hematog. OM

- **CA** → Staph. (M/C)
  - Neonate → Strept.
  - SCA → Salmonella.
- **SOI** → Septic focus. (teeth, tonsils)
- **ROI** → blood from septic focus.

Pathogenesis

Mild trauma → **Metaphyseal** heamatoma (↑ *vascularity* / *stagnant circ.* / *liable to trauma*)
→ **Infection**
→ **Intera-oseous abscess obstructing BVs.**
→ **Pus spreads through volk. canals**

برة "Sub-peri-osteum"

Sub-periosteal abscess
→ New bone formation.
"Involucrum"

If NOT ttt. well

→ **Chronic OM "Brodie's Abscess"**
→ **Sinus "Cloaca" + Sequestrum**

تحت "Medulla"

the whole bone.

فوق "Septic Arthritis"

OM never crosses Epiphysis except if

metaph. is intra-capsular. (upper Humerus & femur)

C/P

Symptoms

Young Child (5-15 ys)

1) FAHM-R.
2) Sever Pain ↑ by mov.
3) Pseudo-paralysis. (Afraid to use it)

Signs

1) RHTS.
2) Painful active mov. ONLY. (DD)
3) Symp. effusioin of the adjacent joint.

Comp.

General

Septicemia & pyemia.

Local

1) Chronic OM.
2) Septic arthritis.
3) **Path. fracture. (M/D)**
4) Deformity.

Invest.

Lab

1) **CBC** → leucocytosis + ↑ ESR.
2) **Blood** → C&S.
3) **Aspiration** is Diag.

Radio

1) **-ve X- ray** *1st 2wks.*
2) **Bone scan.**
3) **MRI** detects OM b4 radio-changes.
4) **US** to exclude septic Arthritis.

Treatment

Medical

1) **Hospit. + Splinting.**
2) **RAAA**
3) **IV massive ABS** till C&S then Oral for 4 wks.

If no response > 48 hrs

Drainage of sub-peri-osteal abscess through cortical drill holes.

TB of Spine "Pott's Ds."



2ʀʏ TB by blood from 1ʀʏ focus.

M/C site = Th-Lumbur vertebra with inter-vertebral discs in bet.

Infection begins at Ant. vertebral margin → Tubercles → Caseation & fibrous t.



Age = 5 -15 ys

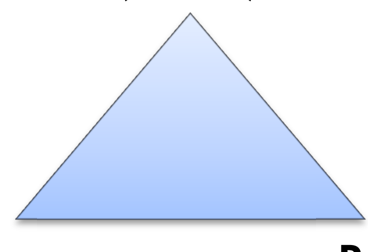
1) **TB Toxemia = 2N 2L.**

2) Back pain & Tenderness. (Earliest)

3) Limitation of spinal mov. in **all directions** → can't pick up a coin from the ground.



Deformity (Kyphosis) ✓



Cold Abscess

Pott's Para-Plegia

Caseous material tracks the tissue planes:

- Cx region → *Retro-ph. abscess.*
- Thoracic region → *Mediastinum abscess.*
- Thoraco-lumber region → *psoas abscess.*
  - a) psoas sheath → *swelling in post. abd. wall.*
  - b) under ing. lig. → *femoral triangle* → *cross fluctuation test bet. 2 collections.*

- **Early "correctable"** *dt compr. by caseous material / edema / TB myelitis.*
- **Late** dt **EAO** *(non-correctable)* *or* **bone deformity** *(correctable)* → *MRI to diff.*

Invest.

1) **X- ray** → Narrow intervert. disc space + Abscess shaddow.

2) **CT scan / MRI** to diff. the late paraplegia.

2) **↑ ESR - PCR.**

3) **Tuberculin + ve .**

Treatment

Conservative

1) **Anti-TB for 9 ms.**

2) **Immob. + Spinal Support.** "Plaster Jacket"

3) **If improved → Spine brace.**

If no response

Debridement Fusion Operation drain caseous + bony necrotic t. by **Costo-transversectomy or Antero-lat. decomp.**

CONG. ANOMALIES

	CONGENITAL TALIPES EQUINO-VARUS "CLUB FOOT"	PERTHES' DISEASE
DEF.	• **TALIPES** = Ankle & foot. • **EQUINO** = plantar flexion. • **VARUS** = inward turning of the sole.	**Idiopathic Avascular necrosis** of the femoral head.
	• **All Cong. Anomalies are M > F except CHD.** • **All are Uni-lateral except CTEV *usually bi-lateral.***	• Age: **5-10 ys.**
CL./P	**ASSOCIATED WITH:** 1) **DDH.** 2) **MENINGIO-MYELOCOELE.** 3) **AMC = Arthrogenisis Multi-plex Congenita** = Multiple j. contractures + Absent skin creases. **Add. inversion deformity**	1) Limping. 2) Limited Abd. & int. rotation. 3) **Knee pain referred from the hip anomaly.**
TTT.	1) **REPEATED MANUAL REDUCTION "SINCE BIRTH"** every wk. for 6 wks + New cast. 2) **AVOID RECURRENCE** → **DENIS BROWNE SPLINT till the age of 2ys.**	1) **SELF-LIMITING IN THE 1ST 2 YS** = good prognosis. 2) Fixed deformity → **Femur Osteotomy.**

NBs for AOM:

TTT OF CHRONIC OM = 3S + BONE GRAFT

- Saucirization.
- Sequestration.
- **Sinusetomy.**

DD OF AOM:

1) **SEPTIC ARTHRITIS:**
   - Absolute limitation of mov.
   - **Invest.** → US "diag."
   - **TTT.** → **ER Atrthrotomy** or Aspiration for C &S.

2) **EWING'S SARCOMA.**
3) **RH. ARTHRITIS.**

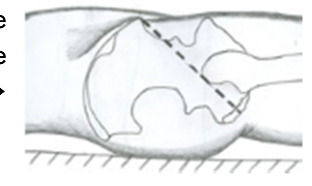
MISCELLANEOUS (1)

FNF = GARDNER'S CLASSIF. OF INTRA-CAPSULAR:

•	I	Incomplete + impacted.	
•	II	Complete + impacted.	
•	III	Complete + partial displacement.	*Injury of retinacular vs. → Avascular necrosis*
•	IV	Complete + total displacement.	

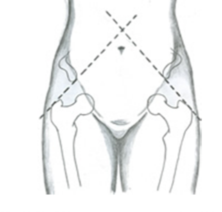
IMPORTANT LINES

- **NELTON'S** = line drawn from ASIS to the iscehal tuberosity → (N) it touches the tip of the greater trochanter, but if it passes above it → **Supra-trochanteric shortening.**



- **SHENE'S LINE**= 2 Hz. lines drawn bet. the ASIS above & tips of the greater trochanter below → run parallel to each other →***If the trochanter is raised the 2 lies converge on the affected side!***

- **SHOEMAKER'S LINE**= line drawn from tip of greater greater trochanter through the ASIS → (N) it crosses the midline **above the umbilicus**, but if the trochanter is raised tit the middle line is crossed below the umbilicus.



- **BRYANT'S TRIANGLE.** = line drawn from ASIS to the iscehal tuberosity → (N) it ***touches the tip of the greater trochanter***, but if it passes above it → **Supra-trochanteric shortening.**

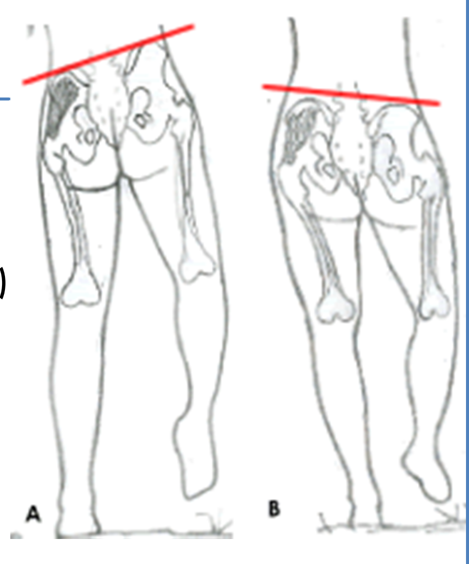


BLOOD SUPPLY OF FEMUR

•	**Neck**	Profunda femoris → Medial & lat. circumflex FA → Extra-capsular ring → retinacular vs.
•	**Shaft**	1 of the perforators of profunda femoris → nutrient a. of femur.
•	**Head**	a. of ligamentum teres from Obturator a.

+VE TRENDLENBERG ?

1)	**SGN inj.**	**(Sup. Gl uteal N.)**
2)	**HD.**	**(Hip dislocation)**
3)	**FNF??!**	**(Fracture Neck Femur)**
4)	**Coxa Vara**	**(neck-shaft angle < 120^0)**
5)	**Weak glutei.**	**(eg. Poliomyelitis)**



MISCELLANEOUS (2)

FRACTURES & DISLOCATIONS

MUS GRI

- **Montegea fracture-dislocation** = upper 1/3 **U**lna + **S**uperior R-U joint.
- **Galeazzi fracture-dislocation =** lower 1/3 **R**adius **+** **I**nferior R-U joint.

SHOULDER DIS.

1) **M/C** body **dislocation** = Shoulder.
2) **M/C** Shoulder **dislocation** = Anterior.
3) **M/C** comp. **of Shoulder** = Recurrence.

ANT. HIP DIS.

1) Flexion – Abd – Ext. rotation **= Ant. Shoulder dis. + FNF.**
2) **Femoral N. injury.**

CENTRAL HIP DIS. → OBTURATOR N. INJURY.

OSTEO-SARCOMA

DON'T FORGET TO ADD TO YOUR ANSWER!

RECENT CLASSIFICATION OF OSTEO-SARCOMA

CONVENTIONAL TYPES	RAE TYPES
ACCORDING TO MATRIX:	1) Telangectinic. (sinusoids)
1) Osteiod.	2) Giant cell.
2) Chondroid.	3) Small cell.
3) Fibro-blast. (no or little matrix)	4) Extra-Oseous.
	5) Multi-centeric.

STAGING OF ALL MALIG. TUMORS: = (MSTS) MUSCLO-SKELETAL TUMOR SOCIETY

• **I**	Low grade + no metastasis
• **II**	High grade + no metastasis
• **III**	A = Intra-compartmental metastasis.
	B = Extra-compartmental metastasis.